

Scientific Inquiry Formative Assessment Rubric for Elementary School Students

COMPONENT	Beginner (Level 1)	Intermediate (Level 3)	Skillful (Level 5)
I. Making scientific observations and posing testable questions BING.1, BING.2, BING.7 and BING.9	<ul style="list-style-type: none"> Your observations are limited and may include opinions and/or inferences. The question you posed is unclear or cannot be answered by a scientific investigation. 	<ul style="list-style-type: none"> Your observations are sensory-based and systematic, but limited in number and depth. The question you posed is testable, but the factors you are investigating are not measurable. 	<ul style="list-style-type: none"> Your observations are sensory-based, systematic, varied, and enhanced by tools or diagrams. The question you posed is testable, and the factors you are investigating are measurable and can be explained by science.
Examples from your work:			
II. Designing fair tests to answer scientific questions BING.3 and BING.4	<ul style="list-style-type: none"> Your procedure is not clear about what you changed and what you kept the same or what you measured to answer the question. It is hard to understand from your work how you planned to do your investigation. 	<ul style="list-style-type: none"> Your procedure describes one factor to change but not what to keep the same or what to measure to answer the question. Your procedure is a general plan that cannot be repeated because quantities are not stated. 	<ul style="list-style-type: none"> Your procedure is a fair test since it describes one factor to change, what things to keep the same and what to measure to answer the question. Your procedure can be repeated since it describes sequenced steps and exact quantities.
Examples from your work:			

COMPONENT	Beginner (Level 1)	Intermediate (Level 3)	Skillful (Level 5)
III. Recording and working with data BINQ.6 and BINQ.10	<ul style="list-style-type: none"> You collected and recorded too little data to find patterns or be confident in the results. The data shown are incomplete or unclear, and graphs do not accurately display the data in the table. 	<ul style="list-style-type: none"> You collected and recorded appropriate data to address the question, but not enough to identify patterns or to be confident in the results. The data tables are organized, and graphs are scaled and plotted accurately, but some labels and/or measurement units are missing. 	<ul style="list-style-type: none"> You collected and recorded enough appropriate data to answer the question, be confident in the results, and you analyzed the data so patterns could be found. Data are shown in tables or graphs that are organized, complete and include labels and measurement units.
Examples from your work:			
IV. Communicating and evaluating data-based conclusions BINQ.5 and BINQ.6	<ul style="list-style-type: none"> You restated data or retold the procedure, but did not form a conclusion. You did not suggest any changes that could improve the investigation. 	<ul style="list-style-type: none"> Your conclusion is based on your data, but specific findings are not included. You suggested changes to the investigation, but it is not clear how they would improve the investigation. 	<ul style="list-style-type: none"> Your conclusion is based on evidence from your experiment and is supported with data. You suggested changes to the investigation that would increase confidence in the conclusion.
Examples from your work:			